

## VERSION WITH MARKINGS TO SHOW CHANGES MADE

### In the Claims

The claims have been amended as follows:

1           1. (Four Times Amended) A magnetic recording system including a head, a magnetic  
2 media with perpendicular magnetic polarity transitions written thereon and circuitry adapted to  
3 receive a readback pulse with a substantially Lorentzian pulse shape from said head and to detect  
4 said substantially Lorentzian pulse shape, said head for transferring data between the magnetic  
5 media and an exterior environment, **wherein said head is a planar head**, said head comprising:  
6           a write element for inducing said perpendicular magnetic polarity transitions into a  
7 surface of said magnetic media during a write operation;  
8           a yoke having a read gap for sensing said perpendicular magnetic polarity transitions; and  
9           a magnetoresistive read element mounted in a flux flow path of said yoke, wherein said  
10 magnetoresistive read element produces a readback pulse having a substantially Lorentzian pulse  
11 shape in response to one of said perpendicular magnetic polarity transitions.

1           17. (Three Times Amended) A magnetic storage device comprising:  
2           a magnetic media having magnetic polarity transitions perpendicularly recorded thereon;  
3           a read element for reading said perpendicular magnetic polarity transitions, said read  
4 element including:  
5           a flux guide having a read gap, said read gap used for sensing said perpendicular  
6 magnetic polarity transitions and for producing a magnetic flux in said flux guide in response to  
7 each of said perpendicular magnetic polarity transitions, and  
8           a magnetoresistive element mounted in said flux guide for producing a readback  
9 pulse having a substantially Lorentzian pulse shape in response to said magnetic flux; and  
10           circuitry adapted to receive a readback pulse having a substantially Lorentzian pulse  
11 shape from said magnetoresistive element and to detect that said readback pulse has said  
12 substantially Lorentzian pulse shape, **wherein said circuitry includes means for filtering said**

13 **readback signal so that said readback signal has a greater resemblance to an ideal**  
14 **Lorentzian pulse shape.**

1 30. (Twice Amended) A magnetic storage device comprising:  
2 a magnetic storage media;  
3 a head including a write element for inducing perpendicular magnetic polarity transitions in  
4 said magnetic storage media during a write operation, a yoke, and a magnetoresistive read element  
5 mounted in a flux flow path of said yoke and recessed from said magnetic storage media for  
6 producing readback pulses with substantially Lorentzian pulse shapes in response to and in one-to-  
7 one correspondence with said perpendicular magnetic polarity transitions during a read operation;  
8 and  
9 circuitry adapted for receiving readback pulses with substantially Lorentzian pulse shapes  
10 from said magnetoresistive read element, wherein said circuitry includes a detector designed to  
11 detect Lorentzian pulse shapes, **and said detector is a peak detector.**

Claims 5, 20 and 36 have been cancelled, and claims 61-83 have been added.

## REMARKS

Claims 1-4, 6-19, 21-35 and 37-83 are pending. In this Response, claims 1, 17 and 30 have been amended, claims 5, 20 and 36 have been cancelled, and claims 61-83 have been added.

### I. DECISION ON APPEAL

The Decision on Appeal (1) sustained the rejection of 1-4, 6, 7, 11, 13-15, 17-19, 21, 24-27, 29-34, 37, 42-48, 50, 53, 57, 58 and 60 based on *Tanaka et al.* (U.S. Patent No. 5,486,967) and reversed the rejection of claims 10, 49 and 55 based on *Tanaka et al.*; (2) reversed the rejection of claims 1-60 based on *Hesterman et al.* (U.S. Patent No. 5,434,733) in view of *Hamilton* (U.S. Patent No. 4,423,450); and (3) reversed the rejection of claim 55 based on *Somers* (U.S. Patent No. 5,097,371) in view of *Hamilton*.

Thus, the outstanding rejections for claims 5, 8, 10, 12, 16, 20, 22, 28, 35, 36, 38, 39, 40, 41, 49, 51, 52, 54, 55, 56 and 59 have been reversed.

Claim 1 has been amended to rewrite claim 5 in independent form including all the limitations of the base claim and any intervening claim.

Claim 17 has been amended to rewrite claim 20 in independent form including all the limitations of the base claim and any intervening claim.

Claim 30 has been amended to rewrite claim 36 in independent form including all limitations of the base claim and any intervening claims.

Claim 61 constitutes claim 8 rewritten in independent form including all limitations of the base claim and any intervening claims. Claim 62 depends from claim 61 and corresponds to claim 9.

Claim 63 constitutes claim 10 rewritten in independent form including all limitations of the base claim and any intervening claims.

Claim 64 constitutes claim 12 rewritten in independent form including all limitations of the base claim and any intervening claims.

Claim 65 constitutes claim 16 rewritten in independent form including all limitations of the base claim and any intervening claims.

Claim 66 constitutes claim 22 rewritten in independent form including all limitations of the base claim and any intervening claims. Claims 67-70 depend from claim 66 and correspond to claims 23-26, respectively.

Claim 71 constitutes claim 28 rewritten in independent form including all limitations of the base claim and any intervening claims.

Claim 72 constitutes claim 35 rewritten in independent form including all limitations of the base claim and any intervening claims.

Claim 73 constitutes claim 38 rewritten in independent form including all limitations of the base claim and any intervening claims.

Claim 74 constitutes claim 39 rewritten in independent form including all limitations of the base claim and any intervening claims.

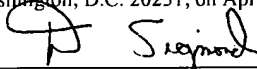
Claim 75 constitutes claim 40 rewritten in independent form including all limitations of the base claim and any intervening claims.

Claim 76 constitutes claim 41 rewritten in independent form including all limitations of the base claim and any intervening claims.

Claim 77 constitutes claim 49 rewritten in independent form including all limitations of the base claim and any intervening claims.

Claim 78 constitutes claim 51 rewritten in independent form including all limitations of the base claim and any intervening claims.

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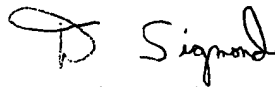


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4 / 1 / 03

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Respectfully submitted,



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